JULY-SEPTEMBER 2025

DPT

DEVELOPMENTAL PEDIATRICS TODAY

Your monthly booster for developmental and behavioural news!

The Official Newsletter of the IAP Chapter of Neurodevelopmental Pediatrics

Chief Editor : Dr Samir Dalwai

DPT IN A GLIMPSE

CENTRAL IAP OFFICE BEARERS 2025

OFFICE BEARERS 2025

Dr KS Multani
Chapter Chairperson 2025

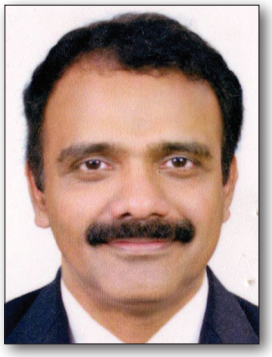
Dr. Zafar Meenai
Chairperson Elect 2025

Dr Deepa Bhaskaran
Vice Chairperson 2025

Dr Leena Srivastava
Imm. Past Chairperson

Dr. Shambhavi Seth
Chapter Secretary 2024-25

Dr Lata Bhat
Joint Secretary



Dr Narayanan
Treasurer

Dr. Samir Dalwai
National Fellowship Coordinator

Dr Soma Sundaram
Joint Secretary

ADVISORS

Dr. MKC Nair

Dr. S.S. Kamath

Dr. Abraham K. Paul

Dr. Pratibha Singhi

Dr. Nandini Mundkur

Dr. Jeeson C. Unni

ADVISORY BOARD

Dr. Uday Bodhankar, Dr. Babu George

Prof. Monika Juneja, Prof. S Sitaraman

Prof. Beena Koshy, Prof. Sheffali Gulati

Dr. Anjan Bhattacharya, Dr Uday Kumar

Dr Nandita D'souza, Dr Maria Lewin

Dr Sanjay KS, Dr Samuel Oommen

Dr Roopa Srinivasan, Dr Manju George

Dr Sharmila Patil

THE BEARERS OF GOOD NEWS (AKA EDITORIAL TEAM)

Dr Samir H Dalwai

Dr Kawaljit Singh Multani

Dr Leena Srivastava

Dr Zafar Meenai

Dr Shambhavi Seth

Dr Anoop Verma

Dr Leena Deshpande

Dr Anjali Gokarn

Dr Pubali Deka

Dr Susan Zacharia;

Dr Nimmy Joseph

Dr Anshuman Verma

Dr Indu Surana

Dr Sreetama Chowdhury

INTERACTIONS - THE EDITOR - DR SAMIR H DALWAI

Dear Friends,

Another very successful Annual Conference - NCDP 2025 and congratulations to all of you!

We had to stop registrations at 500 delegates, making this one of the most successful annual conferences- clearly showing that good academics and science work the best! Gratitude to our dearest teacher, Dr MKC Nair and the entire team who worked against all odds!

The 'Hyderabad Declaration' vision document saw another affirmative action when a MoU was signed by the chapter with National Institute for Empowerment of Persons with Intellectual Disabilities (NIEPID) for undertaking joint training actions in the field in the coming months.

The SANBEPA session brought together professionals involved in the field of developmental pediatrics in the south asian countries.

Besides the Conference, a host of academic activities continues across the nation in the physical as well as online modes!

Another batch of Fellows prepares for the examination guided so well by ther Fellowship Coordinators across India!

I am sure our young vibrant members blessed by the guidance of seniors will continue to excel in taking the Chapter activities to each and every pediatrician in India and South East Asia!

Best,

Samir H. Dalwai

JOINT ATTENTION

MESSAGE FROM CHAIRPERSON

Seasons greetings to all the members of the IAP Chapter of Neurodevelopmental Pediatrics and your families!

At the outset, I want congratulate all chapter members for the excellent work done in making the annual chapter conference a big success at Trivandrum under the guidance of our chief patron Prof (Dr) MKC Nair D.Sc. The conference was one of its kind where the young developmental paediatricians from all over the country interacted with national and international faculty. The 'Hyderabad Declaration' vision document which enlists the direction the chapter will be taking in the year 2025-2026 saw another positive action during the national conference when a MoU was signed by the chapter with National institute for empowerment of persons with intellectual disabilities (NIEPID) for undertaking joint training actions in the field in the coming months. The SANBEPA session during the conference highlighted the role of working together and collaboration among professionals involved in the field of developmental pediatrics in the south asian countries. A big thank you to the entire NCDP 2025 local organizing team for all their efforts and commitment towards the cause.

The academic activities the fellowship team needs has kept us busy on tuesday afternoons with excellent sessions as well as the monthly SANBEPA webinars on the last tuesdays of the month. The chapter is also looking towards the young developmental paediatricians to involve with local IAP bodies in their cities to promote awareness in the field among general paediatricians, teacher and parents. The chapter will provide guidance and support in this field needed. We urge all members to organize events in your local areas to increase awareness among the wider public. The chapter journal is in its third year now and is already indexed with index Copernicus and other indexation process is in the pipeline. Members are requested to share their research, interesting cases with the journal for publication. The current issue has some excellent articles both -academic and nonacademic. Happy reading and learning ….

"All our dreams come true if we have the courage to pursue them" -Walt Disney

Long live IAP,
Jai Hind,

Gp Capt (Dr) KS Multani (Retd)
Chairperson 2025

JOINT ATTENTION

MESSAGE FROM SECRETARY

Dear Members,

It is a pleasure to share the key activities and milestones of our Chapter over the past quarter. This period has been marked by strong academic engagement, collaborative partnerships, and continued dedication to advancing Neurodevelopmental Pediatrics across India.

Successful NCDP 2025 – Trivandrum

A highlight of the year has been the successful conduct of the National Conference of Developmental Pediatrics (NCDP) at Trivandrum, held in association with SANBEPA. With over 500 registrations, the conference witnessed remarkable participation from professionals across the country and South Asian region. The scientific sessions, workshops, and panel discussions were widely appreciated for their depth, practicality, and focus on emerging directions in developmental care. Collaboration with SANBEPA added a valuable international dimension and strengthened our shared mission to enhance neurodevelopmental services across the region. We extend our sincere thanks to the organizing committee, faculty, and delegates for making this a truly enriching event.

Fellowship and Academic Updates

Our fellowship programs continue to expand, with ongoing accreditation processes, strengthened modules, and increased participation. Regular webinars, CMEs, and academic sessions have ensured continuous capacity building for members, fellows, and allied professionals.

In a significant step towards expanding family-centered developmental care, the Chapter introduced the "IAP Ki Baat – Community ke Saath" module, focusing on practical, community-based strategies for care of children with neurodevelopmental disorders.

As we progress into the next quarter, we remain committed to fostering academic excellence, supporting professional growth, and building strong family-centered developmental care systems.

Warm regards,

Dr Shambhavi Seth
Secretary,
IAP Chapter of Neurodevelopmental Pediatrics
2024-25

Social Communication
(From the States and State Coordinators)

Dr. Pubali Deka

22nd National Conference of IAP Chapter of Neurodevelopmental Paediatrics,NCDP 2025
&
2nd South Asian Neurodevelopmental , Behavioural & Environmental Paediatric Association (SANBEPA) Congress

PINCER GRASP- JOURNAL SCAN

Dr Susan Mary Zachariah

Title: Polygenic and developmental profiles of autism differ by age at diagnosis

Authors: Xinhe Zhang, Jakob Grove, Yuanjun Gu et al

Journal: Nature

Date of Publication: 30 October 2025

Citation: Zhang, X., Grove, J., Gu, Y. et al. Polygenic and developmental profiles of autism differ by age at diagnosis. Nature 646, 1146–1155 (2025). https://doi.org/10.1038/s41586-025-09542-6

Purpose of the Study

Although autism is typically thought to emerge in early childhood, many individuals are diagnosed later (late childhood, adolescence or adulthood). This study asks two key questions:

1. Do autistic individuals diagnosed earlier vs. later show different developmental trajectories?

2. Do their genetic profiles differ?

The authors combine longitudinal developmental data from birth cohorts [Millenium Cohort Study, MCS (participants born in 2000); Longitudinal Study of Australian Children - Kindergarten Cohort, LSAC-K 1999; and Birth Cohort, LSAC-B 2003] with large-scale genetic analyses (iPSYCH, SPARK) to test whether early- and late-diagnosed autism represent distinct developmental and polygenic pathways.

Main Findings

1. Across three birth cohorts (MCS, LSAC-B, LSAC-K), autistic children consistently fell into two latent and distinct developmental patterns (based on SDQ scores)

A. Early-childhood emergent trajectory

a) Higher socioemotional / behavioural difficulties by preschool age

b) Difficulties remain stable or decrease slightly over time

c) More likely to be diagnosed earlier (childhood)

B. Late-childhood emergent trajectory

a) Fewer difficulties in early childhood

b) Difficulties increase sharply in later childhood/adolescence

c) More likely to be diagnosed later

These trajectories explained 12–30% of the variance in age at diagnosis—far more than socioeconomic or demographic factors (<6%).

2. Using genome-wide association studies (GWAS), the study shows that common genetic variants explain ~11% of the variance in age at diagnosis.

This heritability remained even after adjusting for IQ, developmental delay, socioeconomic factors and other clinical characteristics; meaning that age at autism diagnosis is partially heritable

This supports the idea that age at diagnosis has a meaningful biological component, not just environmental or healthcare-access factors.

3. Genomic structural equation modelling revealed two moderately correlated polygenic factors

Polygenic Factor 1 – "Earlier-diagnosed autism factor"

Associated with earlier autism diagnosis

Associated with lower early social/ communication skills

Weak-to-moderate genetic correlation with ADHD and mental health disorders

Polygenic Factor 2 – "Later-diagnosed autism factor"

Associated with autism diagnosed in adolescence/adulthood

Strong genetic correlations with ADHD, Depression, PTSD, Self-harm and Childhood maltreatment

This suggests a developmental pathway marked by increasing socioemotional difficulty over time and higher mental-health vulnerability; reflecting different genetic architectures and not just mild vs severe autism.

Importantly, these two factors are not just milder vs. more severe autism; they reflect different genetic architectures.

Conclusions:

1. Earlier- and later-diagnosed autism may represent partially distinct neurodevelopmental pathways, not merely delayed recognition.
2. Early-diagnosed children tend to have early-emerging social/communication difficulties with a distinct genetic profile.
3. Late-diagnosed individuals often show an increase in socioemotional and behavioural challenges during late childhood/adolescence and share substantial genetic risk with ADHD and mental-health disorders.
4. Age at diagnosis should be considered when studying autism heterogeneity, sex differences, co-occurring mental-health problems
5. Diagnosis timing may partly reflect underlying biology, not simply healthcare disparities.

Strengths of the study:

1. Multi-cohort, large-scale design combining four longitudinal birth cohorts and two major genetic datasets (SPARK, iPSYCH) with over 47,000 autistic individuals in the genetic analyses.
2. They used growth mixture models to identify latent developmental trajectories, rather than relying only on cross-sectional data.
3. Robust genetic methodology with GWAS, SNP-based heritability, genetic correlations, and genomic structural equation modelling
4. Multiple analyses were done including sex-stratified models, imputed datasets, ADHD-only comparison groups, and within-family polygenic analyses to assess bias, confounders and to identify associations.
5. Integration of behavioural and genetic data in an attempt to offer a unified developmental–genetic explanation for heterogeneity in autism.

Limitations of the Study

1. The cohorts collected SDQs, not autism specific measures and so core autistic traits were not measured. Also, the age of diagnosis was based on parental report.
2. Genetic analyses focused on Europeans only, restricting generalizability.
3. Factors such as camouflaging, cultural stigma, healthcare access, and clinician biascouldn't be assessed.
4. Some genetic findings may reflect comorbidity rather than autism-specific pathways - eg: later-diagnosed autism showing strong correlation with ADHD and depression may also be due to diagnostic

overshadowing, misclassification and influence of co-occurring psychopathology

Title: Cerebral Folate Deficiency, Folate Receptor Alpha Autoantibodies and Leucovorin (Folinic Acid) Treatment in Autism Spectrum Disorders: A Systematic Review and Meta-analysis.

Authors: Daniel A. Rossignol, Richard E. Frye

Journal: Journal Of Personalized Medicine

Date of Publication: November 2021

Citation: Rossignol DA, Frye RE. Cerebral Folate Deficiency, Folate Receptor Alpha Autoantibodies and Leucovorin (Folinic Acid) Treatment in Autism Spectrum Disorders: A Systematic Review and Meta-Analysis. J Pers Med. 2021 Nov 3;11(11):1141. doi: 10.3390/jpm11111141. Erratum in: J Pers Med. 2022 Apr 29;12(5):721. doi: 10.3390/jpm12050721. PMID: 34834493; PMCID: PMC8622150.

This article examines the following:

1. Links between cerebral folate deficiency (CFD) and autism spectrum disorder (ASD)
2. Prevalence of folate receptor alpha autoantibodies (FRAA) in individuals with ASD
3. Effectiveness and safety of d,l-leucovorin (folinic acid) as a treatment for ASD, both in children with CFD and in those with idiopathic ASD.

Major Findings:

1. There seems to be a strong association between CFD and ASD -

- Across 5 case series, 44% of children with CFD had ASD.
- Across 8 studies of ASD children, 38% had CFD, though with very highheterogeneity.

When CFD was present in ASD, 83% was attributed to FRAA-mediated receptor dysfunction and 43% was associated with mitochondrial dysfunction

Genetic causes were rare (~14%)

2. Folate receptor alpha autoantibodies (FRAA) are highly prevalent in ASD 71% of children with ASD had at least one type of FRAA - Blocking FRAA: 46%, Binding FRAA: 49%

Children with ASD were 19 times more likely to have FRAA than typically developing non-sibling controls. However, TD siblings had similar prevalence to autistic children, suggesting a familial/biological predisposition and parents had lower but notable prevalence (30–45%)

Higher blocking FRAA titers correlated with lower CSF 5-MTHF levels

3. Leucovorin (folinic acid) treatment shows promising effects in ASD

A. In ASD with confirmed CFD - Meta-analysis across case series found improvements with d,l-leucovorin: 67% improvemenr in ASD symptoms, 58% improvement in irritability, 88% improvement in ataxia, 76% improvement in pyramidal signs, 75% improvement in epilepsy and 47% improvement in movement disorders.

Multiple studies reported normalization of CSF folate with treatment doses of 0.5–2 mg/kg/day.

B. In idiopathic ASD (without confirmed CFD), controlled trials (placebo and waitlist controlled) showed significant improvements in language/communication with verbal communication effect sizes of 0.70–1.16. Stronger effects were seen in FRAA positive children. Improvements were also noted in stereotypy, attention, daily living skills

with some trials showing benefits in social interaction also.

The number-needed-to-treat (NNT) for verbal communication was 2–3, which is unusually strong for ASD interventions.

C. When leucovorin was used with multivitamin/mineral complexes or methyl-B12, large effect sizes were reported across language, attention, eye contact, sociability, and sensory symptoms - however, in those, it is difficult to isolate the effect of leucovorin alone

4. Safety profile of leucovorin: Across placebo-controlled and open-label studies, there was no significant increase in adverse effects vs placebo

Most common mild adverse effects were excitement/agitation (11.7%), aggression (9.5%), insomnia (8.5%), increased tantrums (6.2%), headache (4.9%)

Many behavioural side effects often improved with continued treatment (notably agitation).

Overall, leucovorin appears safe and well-tolerated in children.

Limitations of the Study

1. There was high heterogeneity across studies with CFD prevalence in ASD ranging from near 0 to 100 %.
2. Many treatment studies were non controlled with several being open label or retrospective.
3. Some RCTS had very small sample size - one had only 19 participants. Larger multi-center RCTs are required.
4. FRAA assays vary across studies using different laboratory methods.
5. Potential publication bias with positive treatment findings more likely to be published.
6. In combination studies, improvement cannot be attributed solely to leucovorin.

Conclusion:

Though larger studies are warranted, Leucovorin may be beneficial in children with ASD, particularly in those who are FRAA positive, and have comorbid ataxia, epilepsy, language delay and is relatively safe and well tolerated.

FROM GENERAL TO JOURNAL

READING & WRITING – REVIEW OF THE HANDBOOK CHAPTERS

Dr Anjali Gokarn

DISRUPTIVE BEHAVIOUR DISORDERS BY DR. LEENA DESHPANDE

Children with Disruptive behaviour disorders have difficulty in controlling their emotions.

These are conditions like temper, tantrums, extreme anger, aggression, and excessive argumentativeness.

The children are uncooperative, aggressive and destructive.

The lives of people around these children are severely disrupted because of their behaviour

Disruptive behaviour disorders includes two disorders,

1) Oppositional Defiant Disorder and

2) Conduct Disorder

OPPOSITIONAL DEFIANT DISORDER

Symptoms may commonly seen by 6 to 8 years of age, rarely by three years

This can last through teenage and into adulthood

It affects around 3% of school age children and is more common in boys than girls.

Aetiology is multifactorial due to genetic, social and parenting factors

ODD is a clinical diagnosis with help of DSM -5

Features include

Angry irritable Mood

Argumentative/Defiant Behaviour

Vindictiveness

Management includes

1. Cognitive behaviour therapy
2. Social skills group therapy
3. Family therapy
4. Treating comorbid conditions
5. Teacher training

CONDUCT DISORDER:

Most cases of conduct disorders are preceded by Oppositional Defiant Disorder

However they are more serious, even illegal as compared to ODD

Incidence is 2-6 percent in girls and boys and increases with age

Features from DSM-5 include:

1. Aggression to people and animals
2. Destruction of property
3. Deceitfulness or theft
4. Serious violations of rules

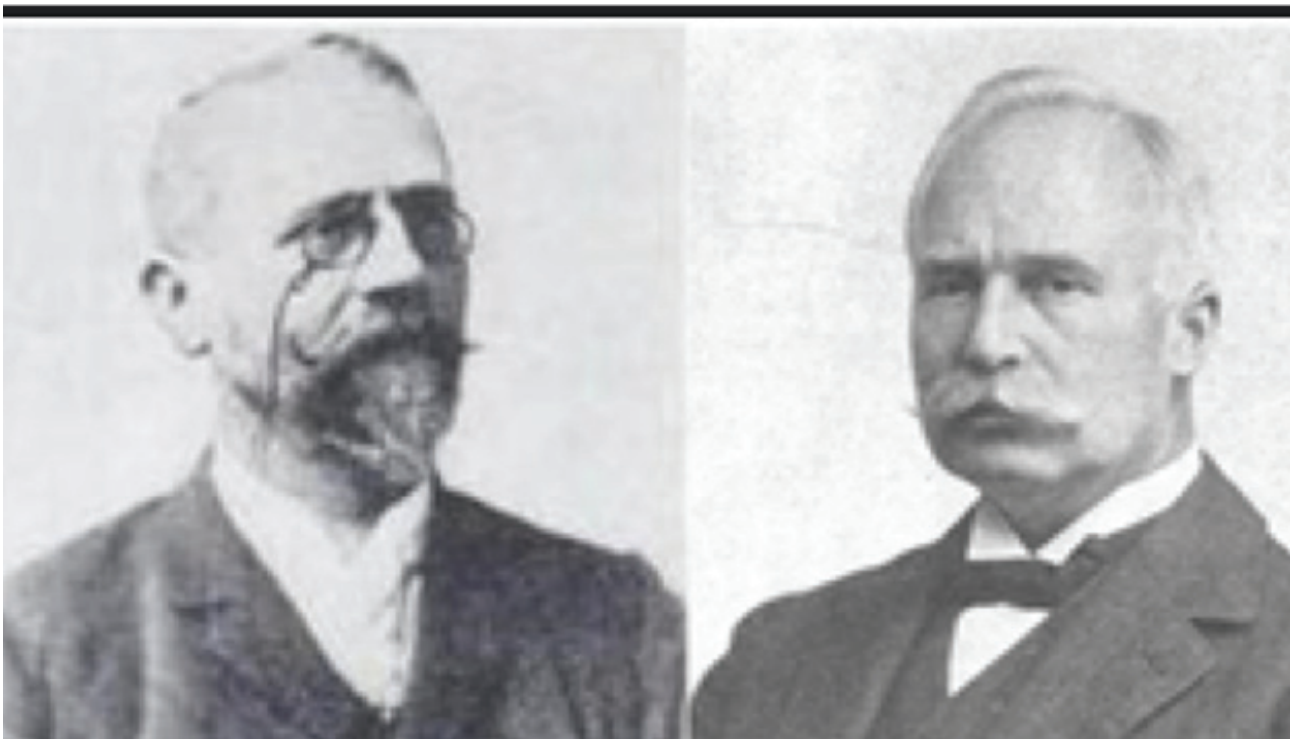
Management:

1. Cognitive Behaviour Therapy
2. Family Therapy
3. Medications

RESPONSE TO NAME CALL - AN EPONYMOUS STORY

THE GHOST OF WERDNIG-HOFFMANN: HOW A DIAGNOSTIC MISTAKE FUELED A GENETIC REVOLUTION

Dr K S Multani



For decades, the name Werdnig-Hoffmann disease haunted the pediatric neurology wards. It was the crushing diagnosis for the most devastating form of Spinal Muscular Atrophy (SMA)—a condition defined by the silent, progressive vanishing of motor neurons, making it a leading genetic killer of infants. But the history of this eponym is not just a medical record; it's a fascinating narrative of diagnostic error, scientific persistence, and the eventual triumph of genetics.

The Original Sin: A Century of Misclassification

The story begins in the late 19th century with two European neurologists. In 1891, Austrian Guido Werdnig meticulously documented two brothers with profound muscle weakness. His groundbreaking contribution was not just the clinical description, but the crucial post-mortem finding: a distinct, localized loss of anterior horn cells (motor neurons) in the spinal cord. Two years later, German Johann Hoffmann published similar work on seven more cases, cementing the pathological identity and coining the term spinal muscular atrophy.

Here lies the historical anomaly: the cases described by Werdnig and Hoffmann, while pioneering, were actually of intermediate severity—closer to what we now call SMA Type II. Yet, their combined names became firmly, and incorrectly, attached to the most

severe, early-infantile form (SMA Type I). This mislabeling was compounded by the notorious "amyotonia congenita" misdiagnosis of the early 1900s. Early, severely hypotonic infants were lumped into this vague category. It was only when researchers recognized that these hypotonic cases shared the specific motor neuron pathology of Werdnig and Hoffmann's findings that the eponym became firmly, albeit inaccurately, cemented to the Type I spectrum. For a century, the label stuck, representing a clinical crisis that defied treatment.

The Chromosomal Pivot: From Pathology to Protein

The breakthrough that dismantled the historical eponym came in the 1990s, when clinical observation gave way to the power of the genome.

1. The Locus (1990): Researchers first pinned the gene responsible for SMA to chromosome 5q. The disorder was no longer a mystery of the spinal cord, but a precise geographic error on a chromosome.
2. The Culprit (1995): The specific gene was identified: Survival Motor Neuron 1 (SMN1). The mechanism was starkly simple: in over 95% of SMA cases, this gene is either deleted or mutated, starving the motor neurons of the crucial SMN protein required for their maintenance and function.

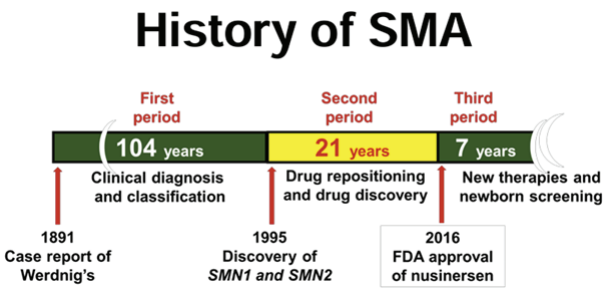
Crucially, scientists also identified the SMN2 gene, a neighboring "backup" copy which is structurally similar with a key difference in its splicing mechanism that causes it to produce mostly non-functional SMN protein. The revolutionary discovery was that the number of SMN2 copies acts as a crucial genetic modifier: more copies equal more low-level, functional SMN protein, which directly correlates to a milder disease presentation.

The Modern Resolution

This genomic clarity rendered the old eponyms obsolete. The condition is now classified on a spectrum of severity—Type 1, Type 2, and Type 3 SMA—a nomenclature based on developmental milestones, not flawed historical labels.

Classification	Historical Nomenclature	Defining Clinical Feature
Type 1 SMA	Werdnig-Hoffmann	Severe, never sits independently
Type 2 SMA	-	Intermediate, sits but never walks
Type 3 SMA	Kugelberg-Welander	Milder, walks independently at some point

This shift was more than academic; it cleared the path for the revolutionary FDA} approved therapies that specifically target SMN1 and SMN2, turning a previously fatal condition into a manageable, and in some cases, preventable disease. The ghost of Werdnig-Hoffmann disease has finally been laid to rest, replaced by a molecular target.



INTERESTING CASES

WHEN A BOOK SEQUENCE REVEALED THE DIAGNOSIS: THE POWER OF DEVELOPMENTAL HISTORY

Dr Ketaki Ravangave
Developmental pediatrician
Child and Adolescent counselor
Shri Ganesh Building Blocks CDC Baner Pune

A 16-year-old adolescent girl was brought for evaluation with prior diagnoses of social anxiety disorder and depression. Her parents reported that she had withdrawn socially, lost interest in academics, and lacked motivation for daily activities. Because she appeared inattentive and unproductive, she was also investigated for ADHD, but the results were negative.

Her mother initially denied any behavioral concerns, describing her as quiet, well-behaved, and obedient. However, during detailed and repeated questioning, a different picture began to emerge. The child had always preferred solitary play, avoided sports and group participation, and was anxious in unfamiliar social settings. She had imaginary friends and showed a strong need for predictability in routines.

The most striking moment came while discussing her reading habits. Her mother proudly mentioned that she loved books and always arranged them in a particular sequence. On further probing, it became clear that this sequence had to remain exactly the same—even after shifting houses or changing rooms. She could not begin a second book before finishing the first one, regardless of her interest. This seemingly harmless detail revealed a pattern of rigid thinking and insistence on sameness, which shifted the entire direction of the evaluation.

Further exploration revealed longstanding social communication difficulties, sensory sensitivities such as disliking bathing and certain textures, and challenges in flexible thinking. Her reduced motivation and social withdrawal were not merely depressive symptoms but expressions of deeper neurodevelopmental differences.

A thorough developmental and behavioral history led to the clinical impression of high-functioning Autism Spectrum Disorder with comorbid social anxiety and depressive symptoms.

This case stands as a classic example of untreated and undiagnosed Autism Spectrum Disorder in a bright adolescent, leading to secondary depression, social withdrawal, and academic stagnation. What began as subtle developmental differences gradually evolved into emotional distress and a break in educational progress—risking the future of a highly capable individual.

It highlights that parental concerns can often be just the tip of the iceberg, and that only through a comprehensive developmental and psychosocial history can clinicians uncover the true roots of a child's challenges.

NON VERBAL COMMUNICATION

NON-VERBAL COMMUNICATION IN THE NEURODEVELOPMENT CLINIC

Dr. Anoop Verma
Raipur

Introduction

In the Neurodevelopment clinic, every child "speaks," even when they do not use words. Non-verbal communication (NVC) becomes the primary language through which clinicians understand developmental level, emotional tone, social connectedness, and underlying neurobehavioral conditions.

Nearly 60–80% of human communication is non-verbal, and in children with autism, global developmental delay, speech delay, or behavioral disorders, nonverbal signals often provide more diagnostic clarity than spoken language.

Why Non-Verbal Communication Matters

Children with neurodevelopmental disorders communicate through:

- Eye gaze
- Gestures
- Posture
- Facial expressions
- Motor patterns
- Proxemics (use of space)
- Autonomic signs (breathing, flushing, sweating)

A trained clinician can extract rich information about:

- Joint attention
- Social reciprocity
- Sensory processing
- Motor planning and imitation
- Emotional regulation
- Executive function

Key Components of Non-Verbal Communication in Pediatric Neurodevelopment

1. Eye Gaze & Joint Attention

- Does the child seek shared attention?
- Does the child look at the examiner and the object alternatively?
- Lack of joint attention by 12–14 months is an early sign of ASD.

Clinical Pearl:

"Where the eyes go, the brain follows."

2. Gesture Profile

- Pointing (proto-imperative vs. proto-declarative)
- Waving, nodding, showing
- Use of hand-leading (common in autism)

- Stereotyped gestures

Red Flag: Absence of pointing by 18 months.

3. Facial Expression & Emotional Tone

Observe:

- Range of expressions
- Social smile
- Reciprocity (smiling back)
- Flat or inappropriate affect

Children with ASD may show:

- Reduced social smiling
- Poor emotional sharing
- Limited facial modulation

4. Motor Behavior & Movement Patterns

Motor clues often precede language delays:

- Hand flapping
- Tiptoe walking
- Body rocking
- Clumsiness / dyspraxia
- Poor imitation

These offer insights into motor planning (dyspraxia) and sensory overload.

5. Social Pragmatics Through Body Language

Note:

- How the child enters the room (curious vs. avoidant)
- Comfort with proximity
- Approach-withdrawal pattern

This reflects temperament, anxiety, and attachment style.

6. Sensory Responses (Non-Verbal Indicators)

- Covering ears
- Avoiding touch
- Fascination with lights
- Over or under-reaction to sensory input

These help identify sensory processing disorders and guide therapy.

Practical Approach for Clinicians: 5-Minute NVC Assessment

1. Observe from a distance (30 seconds):

- Eye contact
- Comfort entering room
- Parent-child dynamics

Engage with an object (1 minute):

- Joint attention
- Gesture attempts
- Sharing behavior

3. Engage with the child socially (1 minute):

- Response to name
- Social smile
- Reciprocity

4. Motor observation (1 minute):

- Gait
- Stereotypies
- Postural tone

5. Sensory clues (30 seconds):

- Tactile / auditory responses
- Atypical interests

Role of Parents in Non-Verbal Communication

Parents provide invaluable insights into:

- Child's preferred communication style
- Triggers for maladaptive behaviors
- Routine interactions at home

Tip: Encourage parents to share home videos (playtime, mealtimes, tantrums).

How Non-Verbal Cues Aid Differential Diagnosis

Condition	Key NVC Features
Autism Spectrum Disorder	Poor eye contact, hand-leading, reduced gestures, limited reciprocation, sensory avoidance
ADHD	Constant fidgeting, impulsive approach, poor sitting tolerance
Global Developmental Delay	Reduced repertoire of gestures, immature motor patterns
Intellectual Disability	Limited problem-solving gestures, slower social cues
Cerebral Palsy	Motor asymmetry, poor voluntary gestures
Selective Mutism	Good non-verbal reciprocity despite lack of speech
Attachment Disorders	Avoidant gaze, inconsistent social response

Integrating NVC Into Clinical Decision Making

- Guides early diagnosis (especially ASD)
- Helps design individualized therapy goals
- Enhances rapport and cooperation
- Improves quality of parent counselling
- Reduces reliance on structured tests alone

Clinical Pearls for Busy Pediatricians

- "Watch first, examine next."
- A child's body language in the first 60 seconds gives more information than a 10-minute interview.
- Non-verbal communication often precedes verbal milestones in developmental regression.
- Always observe parent–child synchrony: repair, rupture, and recovery in interactions.

Conclusion

Non-verbal communication is a powerful diagnostic tool in the neurodevelopment clinic. By cultivating a keen observational eye, clinicians can detect early deviations, plan targeted interventions, and build a meaningful connection with every child—irrespective of their ability to speak.

In a field where "every behavior is a message," non-verbal cues become the true language of neurodevelopmental pediatrics.

Suggested References

1. Lord C, Elsabbagh M, Baird G, Veenstra-Vanderweele J. Autism spectrum disorder. Lancet. 2018;392(10146):508-520.
2. Zwaigenbaum L, Bauman ML, Choueiri R, et al. Early Identification of Autism Spectrum Disorder. Pediatrics. 2015;136(1):e10-e40.

3. Mundy P, Jarrold W. Infant joint attention, neural networks, and social cognition. Neural Netw. 2010;23(8-9):985-997.
4. Trevarthen C, Aitken K. Infant inter-subjectivity: Research, theory, and clinical applications. J Child Psychol Psychiatry. 2001;42(1):3-48.
5. American Academy of Pediatrics. Identifying Infants and Young Children With Developmental Disorders. Pediatrics. 2006;118(1):405-420.
6. Wetherby AM, Prizant BM. Communication and Symbolic Behavior Scales. Paul H Brookes Publishing; 2002.
7. Dawson G, Bernier R. A quarter century of progress on the early detection and treatment of autism spectrum disorder. Dev Psychopathol. 2013;25(4):1455-1472.
8. World Health Organization (WHO). ICF: International Classification of Functioning, Disability and Health. WHO; 2001.

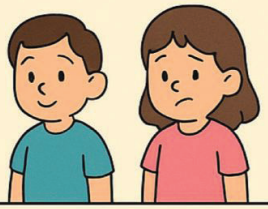
Non-Verbal Communication in the Neurodevelopement Clinic

Eye Gaze & Joint Attention

- Does the child seek shared attention?
- Does the child look at the examiner and the object alternately?

Facial Expression & Emotional Tone

- Range of expressions
- Social smile
- Body rocking
- Clumsiness



Gesture Profile

- Pointing
- Waving
- Nodding
- Showing
- Hand-leading
- Stereotyped gestures

Motor Behavior & Movement Patterns

- Hand flapping
- Tiptoe walking
- Body rocking
- Clumsiness

Sensory Responses (Non-Verbal Indicators)

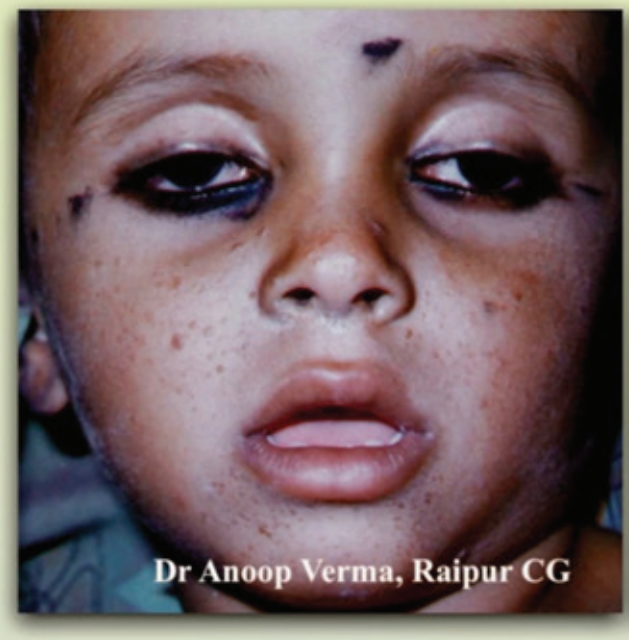
- Covering ears
- Avoiding tuch
- Fascination with lights
- Over or under-reaction

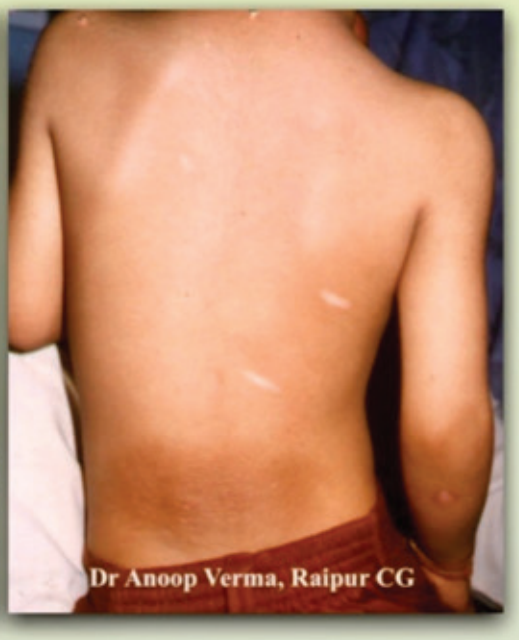
Complied by- Dr Anoop Verma Raipur

SPOTTER

Clinical Scenario

A **4-year-old male** is brought by his parents with complaints of **recurrent seizures** (focal to generalised) for the last 8 months. The frequency has gradually increased from once every 3–4 weeks to **3 episodes in the last month**. Parents report that as an infant, the child had brief episodes of **sudden jerks** clustered together, which were labeled as "colic" at that time. Developmental history shows **speech delay.** His skin showed 3 **hypopigmented spots**





1.What is you diagnosis?

2.Name two early cutaneous signs that can present in infants with this condition.

3.What important neurodevelopmental disorders are strongly associated with this condition?

4.What are the common seizure types seen in these children?

5.Which neuroimaging finding is characteristic of this condition?

ANSWERS

1.What is you diagnosis? The diagnosis is "Tuberous Sclerosis Complex" (TSC) with

- Recurrent focal seizures
- History suggestive of infantile spasms
- Neurodevelopmental concerns (ASD features / speech delay)
- Multiple cutaneous stigmata

2. Name two early cutaneous signs that can present in infants with this condition. The early cutaneous signs in infants are-

- **Ash-leaf macules**
- **Infantile facial angiofibromas** (usually appear 2–5 years)
- **Shagreen patch** (trunk)
- **Café-au-lait spots are NOT typical**

Presence of ≥3 hypomelanotic macules strongly suggests TSC.

3. What important neurodevelopmental disorders are strongly associated with this condition?

Neurodevelopmental disorders associated in TS are-

- **Autism Spectrum Disorder (ASD)** (40–60% of children with TSC)
- **Global developmental delay**
- **Intellectual disability**
- **TSC-Associated Neuropsychiatric Disorders (TAND):**
  - ADHD
  - Anxiety
  - Learning disabilities
  - Behavioral dysregulation

"In TSC, epilepsy is the early visitor; neurodevelopmental issues are the long-term companion."

4. What are the common seizure types seen in these children?

The Common seizure types seen in TSC are-

- **Infantile spasms** (very common in infancy)
- **Focal seizures**
- **Tonic seizures**
- **Refractory epilepsy** is common due to cortical tubers

Vigabatrin is first-line for infantile spasms in TSC.

5. Which neuroimaging finding is characteristic of this condition?

The Neuroimaging hallmark seen are-

- **Cortical tubers**
- **Subependymal nodules (SEN)**
- **Subependymal giant cell astrocytoma (SEGA)**
  - Obstructive hydrocephalus risk

Teaching Points

1. **Ash-leaf spots + seizures = TSC until proven otherwise.**
2. Many "colic-like" episodes in infancy may actually be **infantile spasms**.
3. **Early seizures predict worse neurodevelopmental outcome** in TSC.
4. Every child with developmental delay + skin lesions requires **MRI for cortical tubers**.
5. This is a lifelong multisystem disorder — require **renal, cardiac, eye, and lung surveillance**.

RISE IN AUTISM: PEDIATRICIANS AT THE FOREFRONT

Dr Jyoti Bhatia
Senior Consultant Developmental and Behavioral Pediatrics
Apollo Hospital Noida
Blossom Child Development Centre
Noida & Greater Noida
Email: drjyotibhatia@gmail.com

Autism is no longer a rare diagnosis in India. Pediatricians across the country are seeing more children with autism and autism-like symptoms in their clinics. This rise creates an urgent need for pediatricians to strengthen their skills so that children receive timely, standardized, and evidence-based care.

Research consistently shows that with early and effective intervention, many children with autism can achieve good developmental outcomes and grow into productive, emotionally resilient adults. Yet, in India, this remains a challenge. Therapy centers have multiplied, but wide variation in training, inconsistent practices, and minimal quality monitoring mean that families often struggle to access reliable care.

Why Pediatricians Matter

As per IAP guidelines, autism management is best delivered through interdisciplinary teams coordinated by a developmental pediatrician or pediatrician. Interventions should be structured, evidence-based, and tailored to developmental needs, with a focus on core features of autism—communication, social skills, and behavior.

However, in many Indian settings, therapy is initiated without a proper pediatric evaluation or ongoing pediatric supervision. This leads to fragmented care, missed medical issues, and compromised outcomes. Pediatricians, as the first point of contact and trusted guides for families, are uniquely positioned to close these gaps.

Therefore, there is an urgent need to build capacity of pediatricians to assume a more active role in Autism management.

Practical Roles for Pediatricians

Recognizing Autism Early:

Strengthening developmental screening and surveillance involves training pediatricians to recognize early signs of autism and to routinely use standardized tools such as the M-CHAT at 18 and 24 months. Although screening practices are better than before, many cases are still missed, and universal use of these tools is not yet routine.

Making Effective Referrals:

Appropriate referrals are a key responsibility of pediatricians in our country. Given the trust parents place in them, pediatricians should

guide families to intervention teams that provide standardized, evidence-based care. Where available, direct referral should be made to a developmental pediatrician.

Follow-up:

Once a child begins intervention, the pediatrician should review progress every 1–2 months initially, and then every 3–6 months. These visits are opportunities to psycho-educate parents, coordinate with intervention teams, and provide guidance. Familiarity with basic management principles and simple checklists (see below) can greatly support this process.

Medical issues

- Check whether hearing, vision, thyroid function and nutritional status has been evaluated
- Check for and manage coexisting medical issues (e.g., sleep disturbances, feeding difficulties, recurrent illnesses) that may affect development

Quality of Intervention

- Request documentation, if not there
- Check whether the intervention is designed according to the developmental needs of the child and targets core deficit areas (improvement in social and communication skills)
- Check whether parents are involved in the therapy process

Child's well-being

- Check for any negative impact on emotional well-being of the child: simple questions like 'Is the child happy when he goes for, and comes back from therapy' can be helpful. Check for anxiety or significant behavioral issues
- Importance of playful interactions during early childhood can be underscored

At each follow-up, pediatricians should review the ongoing therapy and reinforce the need to continue or modify interventions based on the child's progress.

Guiding and Educating Parents

Pediatricians can empower parents by explaining the nature of autism and intervention clearly, addressing concerns about alternative therapies, guiding them toward appropriate treatments, and sharing reliable educational resources.

Follow Up Beyond Early Childhood

In older children and adolescents, the focus shifts to functional gains across domains—better communication (including AAC), independence in daily living, participation, and mental well-being. Pediatricians should guide parents about this change in approach. While early intervention services have grown in India, support for school-age children and adolescents with autism remains limited.

Suggested check list

- Is the child independent/gaining independence in daily activities?
- Are there concerns about mood, irritability, or aggression?
- Does the child engage with peers or have meaningful relationships?
- Is there a positive learning curve, even if slower than peers?
- Is the child able to communicate effectively?

These questions help detect areas needing further support and referrals can be accordingly made.

Early Developmental Guidance for Parents

Since poor early environmental inputs may contribute to autism risk, developmental

guidance during routine pediatric visits—especially immunizations—can support healthier outcomes. Even brief, practical advice can make a difference.

Key messages for parents:

- No screen time under 2 years; avoid screens during meals or as a calming tool.
- Calm caregivers, calm children—help parents manage their own stress.
- Engage with the child through talking, play, and face-to-face interactions.

The Way Forward

For India, the way forward lies in gradually integrating autism care into routine pediatric practice, supported by developmental pediatricians through training and capacity building. If pediatricians can strengthen their role in screening, referral, follow-up, and parent education, we can create a more consistent and higher-quality system of care.

In essence, pediatricians are not just the first point of contact but also the trusted guides who can ensure children with autism receive the right interventions, at the right time, in the right way. By embracing this responsibility, they can make a profound difference to children, families, and society at large.

SUDDEN BURSTS OF LAUGHTER

Dr Leena Deshpande

SIMPLE TASK?

I saw this 7 year old boy in clinic. He is comfortable in the clinic now and tells me all problems. He has a kidney condition and I have advised him to 'double void'. Meaning pass urine twice everytime he goes. So my general advise to make it simple is that once he goes to pass urine, he should do so, then count from 1 to 20 and pass urine again. Simple enough?

But his mother told he was having some issue with it. When asked she said that he followed what I said diligently but was still facing difficulties.

I was not clear what the problem was. So I raised a questioning eye. He said, "after I finish passing urine and count from 1 to 20, other children laugh at me'. I asked why. He showed me his counting. He could not do it in his head and had to use fingers to count. So everyone came to know!

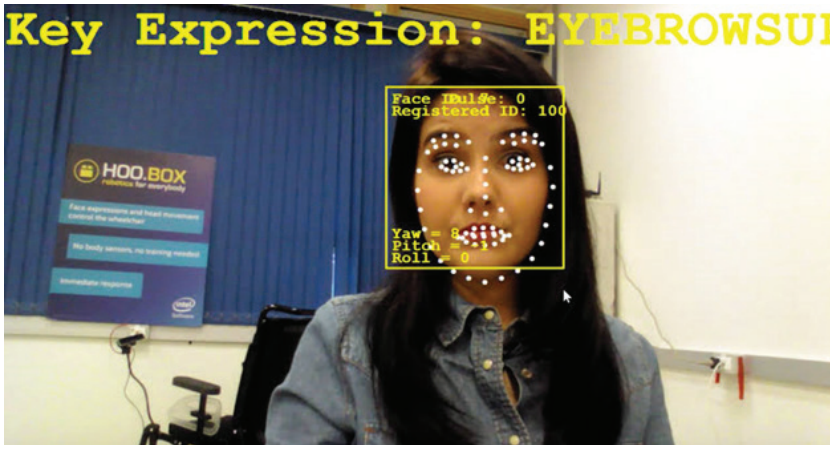
When I asked him to count in his head, he demonstrated it in the clinic and clearly found it difficult. So a simple thing was not so simple for him. I changed the instruction so that he could sing a song or a nursery rhyme before passing urine again!

(Excerpt from 'Kids, Kidney, Kidding' Book by Dr Pankaj Deshpande, Pediatric Nephrologist)

ROLLING OVER – THE OTHER SIDE -
NEWS THAT IS PATH BREAKING

FROM EXPRESSIONS TO MOVEMENT: AI TO THE RESCUE

Dr Sreetama Chowdhury



The Hoobox Wheelie 7 is an innovative assistive-technology kit designed to offer individuals with severe mobility impairments a new method of controlling powered wheelchairs; instead of relying on traditional hand-operated joysticks or body sensors, the system interprets facial expressions to direct movement. Developed in collaboration with Intel's AI for Good program, this technology leverages advanced artificial intelligence and computer-vision tools to support users who have limited motor control, thereby enhancing independence and mobility.

Functionally, the Wheelie 7 operates by mounting a 3D Intel RealSense Depth Camera and an onboard computing unit onto an existing electric wheelchair; this setup enables the device to capture and analyze facial gestures in real time. Users can perform simple expressions(such as smiling, lifting an eyebrow, or contracting the nose)which the AI translates into wheelchair commands including forward, backward, turning, and stopping. The system offers several customizable gesture options, allowing each user to tailor the controls to their comfort and physical abilities.

Access to the Wheelie 7 is generally provided through a subscription model, and installation is non-invasive, requiring only a few minutes to attach the kit to a compatible powered wheelchair.

Wheelie 7 is yet to be made available in India, but organisations like Frido are working on innovations in smart wheelchairs. With the rise in AI models in healthcare, we can expect smart wheelchairs for our children in the near future.

Further reading:

Website: http://www.hoo-box.com

Membership Form

Indian Academy of Pediatrics

Chapter of Neuro Developmental Pediatrics

Membership Application Form

(Please fill in capital letters; All Information Mandatory; Pl do not leave any blank spaces)

1. Surname:_____First Name:_____Middle Name:_____
2. Date of Birth _____
3. Central IAP Membership Number (For Pediatricians Only) :_____
4. Permanent address: ……..
……
……
5. Office Address……
……
…… …… ……
6. Email:…….. Landline Telephone:……..
7. Mobile Phone Number (1)……(2)……
8. Present Work Status: Private___Govt.__Medical College__Voluntary Agency ___
9.

Qualifications	Name of University	Year of Passing
MBBS		
MD Pediatrics		
DCH		
DNB Pediatrics		
Others		

10. Areas of Interest of Work _____

P.T.O

Membership Form

11. Membership Subscription:

a) Life Membership for Central IAP Members – Rs 1500

b) Life Associate Membership for Doctors other than Pediatricians – Rs 1500

c) Life Affiliate Membership for All Other Professionals – Rs 1500

12. On online transfer please e-mail the scanned form with transfer details to cdgiap@gmail.com **with cc to** kawaljit000@gmail.com

NAME OF ACCOUNT – **IAP CHAPTER OF NEURO DEVELOPMENTAL PEDIATRICS**
PAYABLE AT ERNAKULAM
FEDERAL BANK LTD
ERNAKULAM / KATHRUKADAVU
ACCOUNT NUMBER **16860100040046**
IFSC CODE – **FDRL0001686**

Signature of the Applicant with date:

For Office Use Only Membership No……

…… Particulars of the receipt: Cheque / D.D

No……Bank…….

Amount……..Date……

ZONAL AND STATE COORDINATORS 2025-26

North Zone : Dr Khurshid Ahmed Wani
East Zone : Dr Atanu Bhadra
West Zone : Dr Leena Deshpande
Central Zone : Dr Deepak Dwivedi
South Zone : Dr Lal D V

STATE	STATE COORDINATORS
J&K	Dr Sheikh Mushtaq Ahmed
PUNJAB	Dr Manmeet Sodhi
HARYANA	Dr Himani Khanna
DELHI	Dr Praveen Suman
RAJASTHAN	Dr Megha Maheshwari
UTTARAKHAND	Dr Shruti Kumar
BIHAR	Dr Rahul Thakur
WEST BENGAL	Dr Indu Surana
ASSAM & NORTH EAST	Dr Pubali Deka, Dr Nilanjan (Tripura)
ORISSA	Dr Subrat Majhi
MADHYA PRADESH	Dr Pradeep Dubey
TELANGANA	Dr Hema Nalini
ANDHRA	Dr Asritha
TAMIL NADU	Dr Sivaprakasam, Dr Sivaraman
KERALA	Dr Manju George, Dr Nimmy Joseph
KARNATKA	Dr Chitra Shankar
GOA	Dr Vibha Parsekar, Dr Elyska
MAHARASTHTRA	Dr Dipti Shinde, Dr Nirali Lohiya
GUJRAT	Dr Swati Vinchurkar, Dr Deepika Jain
JHARKHAND	Dr Shyamal Verma

PAST OFFICE BEARERS OF THE CHAPTER

YEAR	CHAIRPERSON	SECRETARY
	Dr Pratibha Singhi	Dr Nandini Mundkur
2002-2004	Dr Nandini Mundkur	Dr Abraham K Paul
2004-2006	Dr Hanumantha Rao	Dr Jacob Roy
2006-2010	Dr Abraham K Paul	Dr SS Kamath
2010-2013	Dr SS Kamath	Dr Samir H Dalwai
2013-2015	Dr Samir H Dalwai	Dr Prameela Joji
2015-2017	Dr Samir H Dalwai	Dr Chhaya S Prasad
2017-2019	Dr Jeeson C Unni	Dr Leena Srivastava
2019-2023	Dr Shabina Ahmed	Dr KS Multani
2024	Dr Leena Srivastava	Dr Shambhavi Seth

NATIONAL CONFERENCES OF THE CHAPTER

Sl No	Year	Place	Organizing Chairpersons
1	2004	Bhubaneswar	Dr J Sarangi, Dr Arabindo Mohanty
2	2005	Hyderabad	Dr Hanumantha Rao
3	2006	Cochin	Dr Abraham K Paul, Dr S S Kamath
4	2007	Bangalore	Dr Nandini Mundkur
5	2008	Meerut	Dr Priyanka Jain
6	2009	Mumbai	Dr Tanmay Amladi, Dr. Samir Dalwai
7	2010	Delhi	Dr Monica Juneja
8	2011	Chandigarh	Dr Chhaya Prasad
9	2012	Nagpur	Dr Deepti Jain
10	2013	Cochin	Dr Abraham K Paul, Dr SS Kamath
11	2014	Bhopal	Dr Zafar Meenai
12	2015	Madurai	Dr Santhosh Rajagopal
13	2016	Mumbai	Dr Samir Dalwai
14	2017	New Delhi	Dr H Pemde, Dr Shambhavi Seth
15	2018	Hyderabad	Dr Himabindu Singh
16	2019	Pune	Dr Leena Srivastava
17	2020	eNCDP	Dr KS Multani
18	2021	eNCDP 2.0	Dr KS Multani
19	2022	Kolkata	Dr Atanu Bhadra
20	2023	Guwahati	Dr Shabina Ahmed
21	2024	Bangalore	Dr Adarsh E